Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Wireless Telecommunications Bureau Seeks	)	WT Docket No. 12-176
Comment on Request for Waiver of Part 80 to	)	DA 12-1002
Allow Certification and Use of Seareka Maritime	)	
Survivor Locating Device Operating on Frequency	)	
869 MHz	)	

COMMENTS OF VERIZON WIRELESS

Verizon Wireless hereby submits comments to express concerns with the request of Whiffletree Corporation ("Whiffletree"), on behalf of Seareka, for waiver of Section 80.1061[1] of the Commission's rules in order to permit certification and use of Seareka's Maritime Survivor Locating Device ("MSLD") on frequency 869.40-869.65.[2] The frequency contemplated for use with the MSLD is used ubiquitously throughout the United States and in the Gulf of Mexico as a base station transmit frequency within Cellular Channel Block A.[3]

Verizon Wireless appreciates the benefits of MSLDs for water rescue operations, and notes that the Commission's rules set aside the 406 MHz frequency for that use.[4] However,

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[1] 47 C.F.R. § 80.1061.

[2] Public Notice, Wireless Telecommunications Bureau Seeks Comment on Request for Waiver of Part 80 to Allow Certification and Use of Seareka Maritime Survivor Locating Device Operating on Frequency 869 MHz, WT Docket No. 12-176, DA 12-1002, released June 27, 2012 ("Public Notice").

[3] *See* 47 C.F.R. § 22.905.

[4] 47 C.F.R. § 80.1061(a).

Verizon Wireless is concerned that operating MSLDs on heavily-used cellular frequencies as proposed creates the risk that the MSLDs may render the MSLDs useless in critical situations and interfere with cellular operations – which are used frequently by boaters and first responders in life threatening situations. The Commission should carefully evaluate these concerns before granting the waiver request.

I. BACKGROUND

Whiffletree states that the Seareka MSLD transceiver is typically worn on an individual inflatable life vest or other survival equipment and is activated automatically when the life vest is inflated or the individual is submerged in the water. The transceiver, when activated, transmits an alarm signal with a unique digital identification code on frequency 869.4 MHz. This alarm signal is capable of being received by the parent vessel and any other vessel within range that has a MSLD receiver. The transceiver also has a GPS location device that provides location information for the transceiver in the water every 20 seconds.[5]

Whiffletree states further that the transceiver uses a "polite protocol" that checks for other traffic prior to transmitting. If there is a transmission under way on the 869.4-869.65 MHz frequency band, the MSLD will wait until the frequency is quiet before making the transmission. Whiffletree represents that the transceiver transmissions are in short 120 millisecond bursts and power is limited to 500 mW. It therefore asserts that the area affected by the transmissions will be limited to line of sight, and, since use of the MSLD will likely occur in open water, the potential for interference to land-based transmissions is greatly reduced.[6]

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[5] Letter from George E. Lariviere, Vice President, Whiffletree Corporation to Federal Communications Commission, April 30, 2012 ("Waiver Request"), at 1.

[6] *Id.*, at 2.

Whiffletree claims that using different frequencies for the transmissions will hinder the effectiveness of the product because the product is already deployed on European and Asian vessels and changing the frequency on devices deployed in the United States would render those vessels unable to assist in a rescue of a person wearing a device transmitting on different frequencies. It also claims that producing devices that use dual frequencies would result in prohibitive costs.[7]

FCC rules for Emergency Position Indicating Radio Beacons require the use of frequencies in the 406.0 to 406.1 MHz band, a homing beacon operating on only on 121.500 MHz, and testing by a lab recognized by COSPAS/SARSAT partners as well as an independent lab to ensure that the device operates properly and meets U.S. Coast Guard environmental and operational requirements.[8] Whiffletree requests a waiver of these requirements to the extent that the FCC rules contemplate using different frequencies and require a homing beacon. In lieu of the testing requirements, it asserts it will submit a letter from the US Coast Guard stating that the Coast Guard has tested the device.[9]

II. DISCUSSION

Whiffletree requests a waiver of a Commission rule directing providers of Emergency Position Indicating Radio Beacons ("EPIRBs") to use the 406 MHz frequency for that purpose. The Seareka MSLD product that is the subject of the request uses the 869 MHz frequency. The Waiver Request indicates that in most of world, the 869 MHz frequency that Seareka's MSLD

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[7] *Id.*

[8] 47 C.F.R. § 80.1061(a)-(g). *See also,* Public Notice at 1-2.

[9] Waiver Request, at 2-3.

product uses is "open or free."[10] However, in the United States, that frequency is part of the Cellular A Block. Because the requested frequency is heavily used, the waiver request raises several concerns that must be addressed before the waiver is granted.

First, the Commission should consider whether the Seareka MSLD can effectively operate on cellular frequencies. Wireless networks are designed to provide coverage over open bodies of water from transmitters on the shore and from platforms located in the water – such as in the Gulf of Mexico. The Cellular A Block frequency on which Seareka proposes to operate MSLDs is heavily used by providers throughout the United States and in the Gulf of Mexico to provide CMRS services. Indeed, the particular frequency that Seareka plans to use is used for base station transmissions by Cellular A Block licensees. Because base stations transmit constantly, it is unlikely that there will be 120 millisecond transmission gaps for the Seareka transceiver to operate.[11] Given the high probability that the cellular 869 MHz frequency band will be in use at any point in time in the United States, its territorial waters and in the Gulf of Mexico, and Whiffletree's assertion that the MSLD will not transmit when the frequency is in use, it is unlikely that the Seareka device will be able to operate effectively on any body of water within range of a Cellular A Block base station. As such, this frequency would appear to be a poor choice for operating a life saving device in these areas.[12] Before granting the waiver,

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[10] *Id.*, at 2.

[11] Even if such gaps did exist periodically, the transceiver would need to be able to sense those gaps instantaneously and complete the transmission before the base station begins transmitting again. The Waiver Request does not provide sufficient information about the transceiver to determine if this can be done by the MSLD.

[12] If transmissions from a life saving device were rendered ineffective by cellular operations during a rescue attempt, it is easy to envision a request to shut down cellular operations on the 869 MHz frequency until the rescue mission is completed. Complying with such a request, however, cannot be done quickly and could jeopardize cellular coverage in the affected area.

therefore, the Commission should carefully consider whether the Seareka MSLD can effectively operate within range of cellular bases stations.

Second, the Commission should evaluate whether the Seareka MSLD will interfere with cellular networks. In this regard, the Waiver Request provides very little information that would enable the FCC and wireless carriers to assess the potential for interference. For example, Whiffletree claims that the MSLDs will cease to transmit if the 869 MHz frequency is in use. However, it fails to provide any technical information about how the device will work to ensure it does not operate in these conditions. There is also little to no information in the Waiver Request about the types of transmitters used in the life vests and on marine vessels, the types of antennas that will be used, and how MSLDs react when the frequency is in consistent use by others.[13] Whiffletree and Seareka must provide additional information to the Commission and to carriers so that the interference potential of the MSLDs can be evaluated.

Third, the Commission should consider whether the potential problems associated with operating a life saving device on cellular frequencies merits waiving the requirement to use the FCC-designated frequency band. Verizon Wireless notes that Whiffletree currently offers several marine life saving products, including Emergency Positioning Indicating Radio Beacons ("EPIRBs") and Personal Locator Beacons ("PLBs"), for sale on its website that transmit over the 406 MHz frequency.[14] Whiffletree claims, however, that the frequency band set forth by the FCC for operating Emergency Position Indicating Radio Beacons ("EPIRB") and used by these

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[13] Verizon Wireless asked one of its RF engineers to compile a list of questions that Whiffletree should answer in order to allow the Commission and carriers to evaluate the Seareka MSLD. That list of questions is attached to these Comments.

[14] *See* Whiffletree Corporation website at: http://www.whiffletreecorp.com/marine/marinehome.htm.

other products is not acceptable because Seareka's product using the cellular frequency is already in use in other countries and using the United States EPIRB frequencies would be difficult. In particular, it argues that receivers already on marine vessels from other countries would not be able to receive the transmissions and participate in a rescue in United States waters. It argues, further, that it would be prohibitively costly to place dual band transceivers in life vests.[15]

Before granting the waiver, the Commission should carefully evaluate these claims to determine whether certifying an additional rescue device that does not use the FCC-designated frequency is both necessary and justified, particularly in light of the problems associated with using cellular frequencies. In this regard, the Commission should seek additional information from Whiffletree to support that claim that manufacturing dual band receivers is cost prohibitive. It should also explore whether it might be feasible to equip marine vessels from other counties that might travel in United States waters with an additional radio capable of receiving transmissions from transceivers transmitting on the United States EPIRB frequency bands – which presumably would be less costly than putting dual band transmitters in each life vest. Finally, it should consider whether using the United States frequency bands for EPIRB operations might result in more successful rescue operations given the diminished likelihood that the frequencies would be in use.

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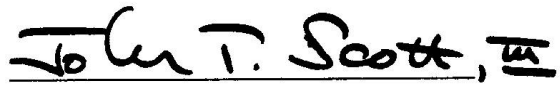
[15] Waiver Petition, at 2.

III. CONCLUSION

The Commission needs considerably more information from Whiffletree before it can evaluate and grant the Waiver Request. Specifically, Whiffletree should provide information about whether MSLDs using cellular frequencies can be effective when in range of cellular base stations, how the Seareka MSLD is designed to protect cellular operations from interference, and why FCC EIRPB frequencies are insufficient for use by Seareka.

Respectfully submitted,

VERIZON WIRELESS

By: 

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ATTACHMENT

1. Both the life vest and ship monitor are described as transceivers. What frequencies do they transmit and receive on? What power is used? Is maximum power always used?

2. The sensing receiver is not specified. What does it do and what is its sensitivity and band width? Does it work continuously or not? Is it located on the life vest or at the monitoring point? How does it shut the transmitter off?

3. What is the occupied bandwidth and OOBE? What is the frequency stability?

4. Since it is expected that cellular base stations will be present on shore nearby most off-shore locations, it there a secondary back up transmission frequency?

5. What provision is there to ensure that the life vest is not triggered when in storage? If it is triggered, how long will it transmit? Will it continue till the battery power is exhausted? If it is triggered accidentally, can a person nearby disable it?

6. The requested band is also used for cellular base stations in Canada and Mexico. Has this device been authorized in these countries?

7. Since the requested frequency is used by base stations, it is possible that the cell site may transmit continuously on this frequency. What will the device do in this case?

8. There is a 30 minute timer that may be overridden by the captain. How does this work? What transmissions are involved?

9. What testing is proposed? What testing of the sensing receiver is proposed? Will it work on all US wireless protocols - TDMA, UMTS, 1X CDMA, EVDO CDMA, LTE, etc.?

10. Cruise ships operate microcellular systems that may interfere with the subject system. Has this been considered?

11. Does the supplier or manufacture guarantee it performance? What happens when it fails to operate?

12. Are there any other applications planned or possible, such as cargo tracking, personnel tracking or data communications?

13. What antennas are used? At what heights are they installed?